03050110-030
(Gills Creek)

General Description

Watershed 03050110-030 is located in Richland County and consists primarily of *Gills Creek* and its tributaries. The watershed occupies 47,679 acres of the Sandhills region of South Carolina. The predominant soil types consist of an association of the Alpin-Lakeland-Pelion-Norfolk series. The erodibility of the soil (K) averages 0.15; the slope of the terrain averages 5%, with a range of 0-15%. Land use/land cover in the watershed includes: 56.51% urban land, 5.80% agricultural land, 0.98% scrub/shrub land, 1.05% barren land, 33.23% forested land, 1.68% forested wetland (swamp), and 0.75% water.

Gills Creek flows through the northeastern section of the City of Columbia and drains into the Congaree River. There are a total of 70.5 stream miles in this watershed, all classified FW. Gills Creek originates near Sesquicentennial State Park and accepts the drainage of Bynum Creek (Rose Creek), Rowell Creek, and Mack Creek before flowing through Rockyford Lake and Forest Lake (120 acres). Jackson Creek also originates near Sesquicentennial State Park and flows through Sesquicentennial Pond and Windsor Lake (46 acres) before accepting the drainage of Little Jackson Creek (Lightwood Knot Branch). Jackson Creek then flows through Carys Lakes (Arcadia Lakes) and Spring Lake to join Gills Creek in Forest Lake. Downstream of Forest Lake, Gills Creek accepts the drainage of Eightmile Branch and Pen Branch (Orphanage Branch) before flowing through Lake Katherine (80 acres). Wildcat Creek (Semmes Lake, Fork Creek, Upper Legion Lake, Lower Legion Lake) drains into Gills Creek downstream of Lake Katherine. Gills Creek and its associated wetlands drain into the Congaree River. Several oxbow lakes, including Alligator Lake, drain into Gills Creek near the river.

Water Quality

Station #	Type	Class	Description
C-048	S	FW	WINDSOR LAKE SPILLWAY ON WINSDOR LAKE BLVD
C-068	P	FW	FOREST LAKE AT DAM
C-001	P	FW	GILLS CREEK AT BRIDGE ON US 76 (GARNERS FERRY ROAD)
C-017	P	FW	GILLS CREEK AT SC 48 (BLUFF ROAD)

***Gills Creek* - There are two monitoring sites along Gills Creek, which was Class B until April, 1992. At the upstream site (C-001), aquatic life uses are fully supported, but there were significant increasing trends in five-day biochemical oxygen demand and turbidity, and a very high concentration of zinc measured in 1995. P,P'DDD (a metabolite of DDT), P,P'DDT, and chlordane (an insecticide) were detected in the 1994 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. At the downstream site (C-017), aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life acute standards, including a high concentration measured in 1996 and a very high concentration measured in 1995. In addition, there is a significant increasing trend in turbidity. In sediment, P,P'DDD was detected in 1994, and P,P'DDD, P,P'DDE, P,P'DDT, fluoranthene, a polycyclic aromatic hydrocarbon (PAH), and di-n-butylphthalate were detected in 1997. A significant increasing trend in dissolved oxygen concentration at the upstream site and significant decreasing trends in total phosphorus and total nitrogen concentrations at both sites suggest improving conditions for these parameters. Both sites are within a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems. Recreational uses are not supported at either site due to fecal coliform bacteria excursions.**

Sesquicentennial Pond **- The pond was applied with aquatic herbicide in 1996 to improve public access to the lake.**

Windsor Lake (C-048) **- Aquatic life and recreational uses are fully supported. This lake is located in a blackwater drainage system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentrations suggest improving conditions for these parameters.**

Forest Lake (C-068) **- Aquatic life uses are fully supported, but there is a significant increasing trend in turbidity and a high concentration of zinc measured in 1996, and one very high concentration each of cadmium and chromium measured in 1997. This lake is located in a blackwater drainage system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems. Significant decreasing trends in total phosphorus and total nitrogen concentrations suggest improving conditions for these parameters. Recreational uses are fully supported.**

Permitted Activities

Point Source Contributions

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)* *COMMENT*	*NPDES#* *TYPE* *LIMITATION*
GILLS CREEK ANCHOR CONTINENTAL PIPE #: 001-007 FLOW: M/R	SCG250180 MINOR INDUSTRIAL EFFLUENT
DITCH TO GILLS CREEK ARAMARK UNIFORM SERVICES PIPE #: 001 FLOW: 0.0144 WQL FOR BOD5	SC0046566 MINOR INDUSTRIAL WATER QUALITY
GILLS CREEK TRIBUTARY FURON CO./HELICOFLEX CO. PIPE #: 001 FLOW: M/R	SC0046418 MINOR INDUSTRIAL EFFLUENT
JACKSON CREEK AMPHENOL PRODUCTS PIPE #: 001 FLOW: 0.72 (PROPOSED) WQL FOR BOD5, TOXICS	SC0046264 MINOR INDUSTRIAL WATER QUALITY
LITTLE JACKSON CREEK AMERADA HESS CORP. #40245 PIPE #: 001 FLOW: M/R WQL FOR BOD5, TOXICS	SC0044989 MINOR INDUSTRIAL WATER QUALITY

Nonpoint Source Contributions

Gills Creek Watershed Project

The Gills Creek Watershed was selected as a nonpoint source pollution project area due to its urban impact on water quality. The watershed was assigned a top priority ranking by the State Nonpoint Source task force in relation to its level of nonpoint source pollution. The waters of Gills Creek are impacted by sediment, fecal coliform bacteria, and litter. Threatened uses and benefits include swimming, fishing, reproduction and survival of aquatic life, wildlife habitat, lake storage capacity, and property value enhancement.

The project was completed in September 1996. A final report was developed that made general recommendations for control of nonpoint source pollutants and was distributed to important stakeholders and decision makers in the watershed. The report provides a guideline from which groups like the Gills Creek Watershed Association and other concerned members of the community can begin to take actions for water quality improvement in the Gills Creek Watershed.

Camp Facilities

FACILITY NAME/TYPE *RECEIVING STREAM*	*PERMIT #* *STATUS*
SESQUICENTENNIAL STATE PARK/FAMILY JACKSON CREEK	40-307-0006 ACTIVE

Landfill Activities

SOLID WASTE LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
ANCHOR CONTINENTAL, INC. INDUSTRIAL	403326-1601 ACTIVE
ANCHOR CONTINENTAL, INC. INDUSTRIAL	IWP-108 CLOSED
ANCHOR CONTINENTAL, INC. INDUSTRIAL	IWP-137 CLOSED
CITY OF COLUMBIA C&D LANDFILL	403326-1601 ACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
CHEROKEE, INC. HIGHWAY NO.1 PIT	0548-40 SAND\CLAY
THE JORDAN COMPANY CONGAREE SAND PIT	0545-40 SAND

Groundwater Concerns

The groundwater in the vicinity of the properties owned by Cardinal Company and Anchor Continental are contaminated with volatile organics from spills, leaks, or unknown sources. Anchor Continental is in the assessment and monitoring phases and Cardinal Chemical Company is in the assessment phase (a CERCLA site inspection is in progress). The surface water affected by the groundwater contamination of both facilities is Gills Creek.

The groundwater in the vicinity of the surface impoundments owned by Amphenol Products is contaminated with volatile organics. The facility is in the remediation phase; surface water corrective action initiated. The surface water affected by the groundwater contamination is an unnamed tributary to Jackson Creek.

Growth Potential

There is a high potential for continued growth in this urban watershed. Although primarily residential, there are a substantial number of commercial and industrial areas. Almost the entire watershed, which runs through the City of Columbia, has water and sewer readily available. Growth is also projected along the newly connected I-77 beltway around the city.